

WHAT IS CLAIMED IS:

1 A group III nitride compound semiconductor device  
of a successively laminated structure comprising:

a substrate;

5 a buffer layer;

a first layer formed of  $In_xGa_{1-x}N$  ( $0 < x < 1$ ); and

a second layer formed of  $In_yGa_{1-y}N$  ( $0 < y < 1$ ,  $y \neq x$ ).

2. A group III nitride compound semiconductor device

10 according to claim 1, wherein a composition ratio of In in said  
first layer is changed continuously or intermittently in a  
direction toward the second layer side from the buffer layer  
side so that a composition of said first layer in a face brought  
into contact with said second layer becomes substantially equal  
15 to a composition of said second layer.

3. A group III nitride compound semiconductor device  
of a successively laminated structure comprising:

a substrate;

20 a buffer layer;

a first layer formed of  $Al_aGa_bIn_{1-a-b}N$  ( $0 < a < 1$ ,  $0 < b < 1$ ,  
 $a+b < 1$ ); and

a second layer formed of  $In_yGa_{1-y}N$  ( $0 < y < 1$ ).

25 4. A group III nitride compound semiconductor device  
according to claim 3, wherein a composition ratio of Al and In  
in said first layer is changed continuously or intermittently  
in a direction toward the second layer side from the buffer layer

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side so that a lattice constant of said first layer in a face brought into contact with said second layer becomes substantially equal to a lattice constant of said second layer.

5        5. A group III nitride compound semiconductor device according to claim 3, wherein a composition ratio of Al and In in said first layer is changed continuously or intermittently in a direction toward the second layer side from the buffer layer side so that a band gap of said first layer in the face brought  
10      into contact with said second layer becomes wider than a band gap of said second layer.

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6.        6. A group III nitride compound semiconductor device according to claim 4, wherein the composition ratio of Al and In in said first layer is changed continuously or intermittently in the direction toward the second layer side from the buffer layer side so that a band gap of said first layer in a face brought into contact with said second layer becomes wider than a band gap of said second layer.

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XOO↑  
C3